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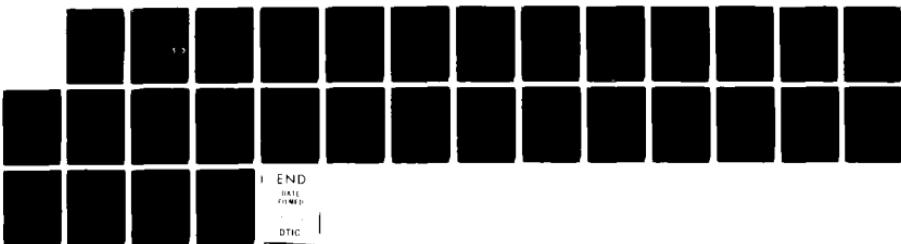
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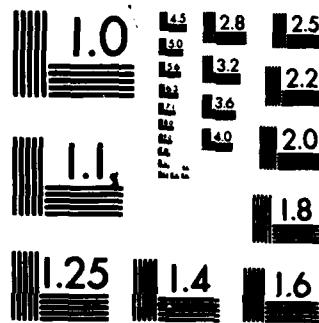
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THE MOTIVATIONAL EFFECTS OF PARTICIPATION VERSUS GOAL SETTING
ON PERFORMANCE

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ABSTRACT

A 3 x 2 factorial design was used to examine the motivational effects of participation in decision making (PDM) versus goal setting on performance. Seventy-two college students were randomly assigned to one of six conditions. The task selected for the study was a toy assembly project adapted from a business game used in an assessment center. The motivational effects of PDM were isolated from the cognitive by imposing the ideas generated through PDM on another condition. Assigned/participative goals were set in terms of the number of toys that could be produced within a 20-minute period. Goal difficulty was held constant between the two conditions. The results showed a significant main effect for goal setting only. Both forms of goal setting led to performance that was significantly higher than that which occurred in the "do best" conditions. The interaction effect between goal setting and decision making was not significant.

THE MOTIVATIONAL EFFECTS OF PARTICIPATION VERSUS GOAL SETTING ON PERFORMANCE

This study is the eleventh in a series of experiments that were designed to assess the effectiveness of participation and goal setting on performance. The series had as their impetus the early field studies by Coch and French (1948) and Meyer, Key and French (1965), as well as the theoretical work of Locke (1968).

Coch and French found that participation in job redesign in a pajama manufacturing plant was effective in increasing productivity levels over that which occurred when employees were allowed no say in the redesign of their jobs. Employee participation also led to greater increases in productivity than that which occurred where employee delegates or representatives participated in the decision making on job redesign. In short, performance was directly proportional to the amount of employee participation in decision making.

A primary limitation of this study from a pragmatic standpoint is that it could not be replicated (French, Israel, & As, 1960; Fleishman, 1965). A primary theoretical limitation of this study was that the participation included goal setting. Thus it is not clear to what extent participation would have affected performance in the absence of goal setting. Goal setting theory (Locke, 1968) states that participation can only affect motivation to the extent that it influences a person's goals (e.g., acceptance/commitment). Consequently, much subsequent research has focused on participation as a method for setting goals.

Meyer (French, Kay, & Meyer, 1965; Meyer, Kay, French, 1965) studied managers who received performance appraisals at the General Electric Company.

He found that to improve performance it is not so important as to how a goal is set (assigned/participative) as it is for a specific goal to be in fact set. However, as noted by Latham and Yukl (1975a) a number of factors make it difficult to reach any conclusions from this study. For example, the participation manipulation was not always successful, there was no objective performance measure, and the conclusions reached were not always supported by statistical tests of significance.

As a result of this pioneering work on goal setting and participation, as well as management's interest in ways of increasing productivity, 11 studies have subsequently been conducted to test the causal relationships between goal setting and performance.

The first study involved 24 logging crews in the South (Latham & Yukl, 1975b). The dependent variable was cunits/hour worked. Participatively set goals led to significantly higher performance than that which occurred among the crews for whom a specific hard goal was assigned by a supervisor, and among the crews who were simply asked to do their best to increase production. It was noted parenthetically that the level of the goal that was set was significantly higher in the participative condition than in the assigned. Because goal attainment was also significantly higher in the participative than in the assigned condition, the authors inferred that participation was effective because it may have resulted in greater goal acceptance (not measured) than was the case with assigned goals.

A second study reported in the same paper by the authors showed no effects on performance regardless of the method by which the goals were set. This was because local management was in a state of transition and consequently did not devote time to the program.

A third study (Latham & Yukl, 1976) involved 45 typists. The dependent variable was lines typed/hours worked. Here no significant difference in performance was found between those with assigned versus participatively set goals. Parenthetically, it was noted that there was also no significant difference in the difficulty level of the goals that were actually set.

The fourth study (Latham, Mitchell, & Dossett, 1978) involved 132 engineers/scientists. The dependent variable was the frequency with which desirable behavior was emitted over a six month period subsequent to performance appraisal. The appraisal instrument consisted of behavioral observation scales or BOS (Latham & Wexley, 1977; 1981). The observers (employees' supervisors) had received intensive training (Latham, Wexley & Pursell, 1975; Pursell, Dossett & Latham, 1980) to ensure objectivity/accuracy in recording job behaviors.

The results showed that only participatively set goals led to a performance increase that was significantly greater than that which occurred in a do best condition and in a control group. Here it was stressed that the participatively set goals led to the setting of goals that were significantly higher than the goals that were set unilaterally by a supervisor. This finding was stressed because for the first time goal acceptance was measured and no significant differences emerged between the two conditions. There was a positive linear relationship between the actual difficulty level of the goal and job performance. The authors concluded that participation in goal setting may be important only to the extent that it leads to higher goals being set than that which occurs when the goals are assigned by a supervisor.

In the fifth study (Latham & Saari, 1979a) an experimental design was used to determine whether holding goal difficulty constant would in fact nullify the effects of participation. The study was conducted in the laboratory using 60 college students. The dependent variable was the number of ideas generated in a brainstorming task. The subjects were randomly assigned to one of three

conditions, namely, participative goals, assigned goals, and "do your best." The goal set by a person in the participative condition was immediately assigned to a person in the assigned condition. The results were clear-cut. Specific goals led to higher performance than that which occurred in the do-best condition. There was no difference between the performance levels of those individuals with assigned versus participatively set goals.

The cognitive effects of participation in goal setting were determined by comparing decision quality with that which occurred in the assigned goal and do best conditions. Ten judges who were not aware of the purpose of the experiment nor of the three conditions for which the lists of ideas were obtained independently rated them on quality. The order in which each list was given to a judge was randomized. No significant difference was found.

This study was immediately replicated (Dossett, Latham & Mitchell, 1979) in two field settings with regard to the motivational effects of participation in goal setting. The initial study involved 60 typists. The dependent variable was the number of problems attempted on a selection test that was being validated. Again, with goal difficulty held constant, there was no significant difference between the two conditions on goal acceptance or performance.

The seventh study (the second by Dossett et al.) involved the performance appraisals of 28 typists. Here the typists were carefully matched on ability before being randomly assigned to conditions. Again, goal difficulty was held constant. The dependent variable was the score on BOS. Four months after their performance appraisal those individuals with assigned goals were performing at a higher level that was marginally significant than those with participatively set goals. After a second four month period, there was no significant difference in performance between those with assigned versus participatively set goals.

The eighth study (Latham & Saari, 1979b) was conducted in the laboratory with 90 college students. The dependent variable was the number of ideas generated in a brainstorming task. In addition to yoking goal difficulty between the assigned and participative conditions, the issue of supportive/nonsupportive behavior on the part of the experimenter was addressed. Supportiveness led to higher goals being set than was the case when the experimenter behaved in a nonsupportive manner. Of relevance to the present article was the finding for the first time that participation in goal setting led to a significantly higher increase in performance than that which occurred in the assigned and do best conditions. This occurred despite the fact that goal difficulty was held constant between the two conditions and there was no significant difference on a measure of goal acceptance. However, the directions given to the subjects were confusing and those subjects in the participative condition asked more clarifying questions than did those in the assigned or do best groups. Here the cognitive role of participation in goal setting was shown.

The ninth study (Latham & Marshall, 1981) involved 57 government employees. The task involved a job analysis of supervisors. The dependent variable was the number of critical job behaviors an employee contributed to the analysis. Again, the goal that was agreed upon jointly by one of the authors and an employee in the participative condition was assigned to an employee in the assigned condition. Employees randomly assigned to the third condition were asked to set a specific hard goal.

There was no significant difference among the three conditions on a measure of goal acceptance. Nor was there any difference in the difficulty level among those with self-set versus participatively set goals. And, with goal difficulty equal across conditions, there was no significant difference

in performance among the three conditions. The correlation between goal difficulty and performance for those with participative, self set, and assigned goals were .62, .69, and .74, respectively. Each of these correlations was significant at the .05 level.

The above studies would appear to indicate that participation in goal setting is only important from a motivating standpoint to the extent that it leads to the setting of a specific hard goal. This conclusion would appear to be strongly supported by those studies where the difficulty level of the goal had been held constant across conditions. However, there were two potential problems with the experimental design that was used. First, it allowed essentially for only a test of the null hypothesis regarding goal difficulty because goal difficulty itself was not systematically manipulated. Second, in only one instance (Dosssett, Latham & Mitchell, 1979, study 2) were steps taken to ensure that individuals in the assigned goal condition were given goals that were compatible with their ability. Thus it was possible that some people may have been assigned a goal that was above or below their ability to attain. Consequently, a tenth study (Latham, Steele, & Saari, 1981) was conducted to determine whether this flaw in the experimental design confounded the previous results.

Eighty-six college students participated in that laboratory study. Half were randomly assigned to either a participative (P) condition where the subject and the experimenter agreed upon a specific goal, or an assigned condition (A=) where each subject was assigned the goals of a colleague that had been agreed upon jointly with the experimenter. The other half were randomly assigned to A \neq or A \dagger . Those in A \neq were matched on the basis of premeasures with a person in the P condition and then were assigned the matched person's

goal. Those in A↑ were assigned a goal selected at random from those that fell in the top quartile of the goals that were set in the participative condition.

The experimental task required each individual to average the ratings on seven 7-point Likert-type items (e.g., $5 + 4 + 1 + 3 + 2 + 5 + 4 / 7 = 3.43$) for each of 10 performance criteria. The dependent variable was the number of performance criterion grades listed by each subject.

Contrary to the hypothesis of modern organizational theorists (e.g., Bennis, 1966; Likert, 1967) the performance of subjects in the P condition was not significantly higher than that of A= or AM=. However, A↑ had significantly higher performance than P. Thus, in light of the findings of this and the previous studies, it would appear that hard goals do in fact lead to higher performance than easy goals regardless of the method by which they are set. These studies provide strong support for the early work by Meyer and his colleagues (French, Kay & Meyer, 1966; Meyer, Kay & French, 1965).

None of the above ten studies, however, address the issue of participation as a variable independent of goal setting regarding its effect on performance. As Tolchinsky and King (1980) correctly pointed out, these studies have simply tested the effectiveness of setting goals with and without participation. Thus, one cannot conclude on the basis of these studies that participation only affects performance through its effects on goals.

The purpose of the eleventh study was to systematically manipulate the effects of participation and goal setting on performance. Consistent with inferences that can be drawn from the ten preceding empirical studies and Locke's (1968) theory of goal setting, it was hypothesized that there would be a main effect for goal setting only.

METHODSubjects

Seventy-two (32 female, 40 male) college students participated in this study. The mean age of the participants was 19.2 years (SD=1.9). Each subject received partial credit toward fulfillment of course requirements in an introductory psychology class. The subjects were randomly assigned to one of six conditions in a 3 x 2 factorial design. The two independent variables in this study were goal setting (participative, assigned, do best) and decision making (participative, assigned).

Task

The task selected for the study was a toy assembly project adapted from a business game used in an assessment center. This task was selected because it lent itself to the setting of specific goals as well as participative decisions as to how the task should be completed.

The task required subjects to join four identical pieces of pre-cut construction paper (approximately one-inch square) together with staples to form a specific shape, described as a toy. For example, the toy which all subjects assembled during a premeasure session was a ball (circle shape). Each ball consisted of four quadrants which were joined together by two staples on each adjoining edge, resulting in a total of eight staples.

Upon completing five toys, each subject was required to place the toys in a bin on the workbench and place a paper divider (stacked adjacent to the bin) over them to isolate them from the next group of five toys. Each paper divider was numbered in increments of five as a means of providing feedback to the subject with regard to the number of toys completed up to that point.

This was important in that feedback is necessary for subjects to measure progress toward the goal (Locke, Shaw, Saari, & Latham, 1981).

In summary, the task was a simulation of a routine assembly job which is encountered in small manufacturing firms. The objective of each subject was to assemble as many toys as possible or to attain a specific goal, depending upon the experimental condition, in the twenty minutes allotted.

Procedure

Each subject worked alone at a work table in a small room. The experimenter was seated off to one side of the work table for the duration of the experimental situation. To avoid being obtrusive when not actually communicating with the subject, the experimenter was involved in quiet study. All the materials necessary to perform the task were available on the work table. In addition, a clock was visible for subjects to keep track of their time. The clock was necessary because it enabled each subject to measure his/her performance against a goal and/or time limit.

The subject was told that the task to be performed required manual dexterity, and that the experimenter needed a measure of his/her ability to perform this task to determine if he/she was suitable for continuing with the experiment. Thus, the subject would be timed for four minutes on a pretest task.

The actual purpose of the pretest was to provide a measure of each subject's ability. In testing for motivation effects, ability, if not controlled, becomes error variance. Thus, unless the motivational effects are extremely robust, the failure to control for ability could lead to inconclusive results.

After the experimenter explained the task to the subject and actually demonstrated how to assemble a circle, the experimenter asked the subject to

build two circles just for practice prior to the premeasure. Upon completing the two circles the subjects was asked to reload the stapler to ensure that it would be full for the pretest and to ensure that he/she was familiar with the reloading process. If a subject ran out of staples while working, he/she was asked to loudly say "staples", and immediately reload the stapler and continue working. The experimenter would then automatically stop and restart the stopwatch as required so that reloading time would not be included in the time deadline.

During the pretest the subject was asked to stack all completed circles off to one side of the workbench so that it would not be obvious exactly how many circles had been assembled during the four minute time period. This precaution was intended to reduce the ability of the subjects who were subsequently assigned to the do best conditions to set specific goals on the basis of their pretest performance. All subjects were asked to work as rapidly as possible during the premeasure period.

At the end of the four minute work period, the experimenter initiated the job simulation situation by instructing the subject to imagine him/herself in an actual work environment and to think of him/herself as an employee in a small manufacturing firm that made toys for children. The subject was asked to consider the experimenter as the supervisor in the production department where toys were assembled. The rationale given to the subject for this job simulation was that the experimenter was interested in determining the ability of people to become involved in a role-playing situation to be used for predicting the future performance of job applicants for a toy assembly plant. Following the instructions, the experimenter manipulated the independent vari-

ables of goal setting and participation. After the twenty minute work period the experimenter collected the completed toys and give the subject a questionnaire to fill out.

Manipulating the Independent Variables

Task strategy decisions were manipulated first, followed by goal setting. Three characteristics of the task were variable in order to allow conditions for decision making regarding task strategy.

In the participative decision-making condition, the subjects were first allowed to select one of three possible types of toys to assemble based on a cost and selling prices list. The subjects selected from these choices on the basis of personal preference (e.g., a perceived difference in the ease of handling parts during construction) or estimated market appeal (e.g., greater public appeal for a red "contemporary" toy box than for a green "classic" style toy box).

A second decision involved the method of toy construction. Toys could be assembled as complete units or as subunits to be accumulated four at a time and joined to form two complete units. The third decision required of subjects in the participative decision condition was an unrestricted choice of when to schedule two one-minute rest breaks during the work period.

In the assigned decision condition the experimenter provided subjects with the same amount of information as subjects in the participative condition. This was done to control for potential differences in job clarity and understanding which could impact performance (Latham & Saari, 1979b). Each subject was assigned the task choice alternatives based on the alternatives selected by a prior subject in the participative condition.

In summary, the major motivational mechanism by which participation in decision making (PDM) affects employee behavior is by increasing a commitment to performance (Coch & French, 1948; Bartlem & Locke, 1981). The motivational effects of participation in decision in the present study were isolated from the cognitive elements by imposing the ideas generated through PDM on people who were randomly assigned to another condition. As a further safeguard to ensure that the cognitive effects of PDM were not confounded with motivational effects, a pilot study was run to determine whether the choice of toy, construction, or rest break could affect performance. No effect on performance was observed.

Goal setting was manipulated as follows: Subjects were randomly assigned to either a participative goal setting condition, an assigned goal condition, or a do best control condition. Each subject in the two goal setting conditions was told that studies have shown that specific, difficult, yet attainable goals result in increased performance as compared to simply doing one's best, and that for our department to be a success we needed to strive for maximum performance. Then, each subject in the participative goal setting condition was told how many toys he or she had assembled in the four minute pretest period, and was encouraged to set a difficult but attainable goal in terms of the number of toys that could be produced within the twenty minute work period. After deciding upon a goal, each subject was asked if he or she was satisfied that the goal fit the description of "difficult, but attainable," and was asked to change the goal if desired. The experimenter then recorded the subject's goal on a 3 x 5 card and placed it in view on the workbench.

In the assigned goal condition the subjects were also told the advantages of goal setting. They were then assigned a specific goal. This goal was based on a difficulty factor derived from a second pilot study (N=30) of subjects in a participative goal condition. That is, each subject's pretest performance in the assigned goal condition was multiplied by the average goal difficulty level (the goal level selected divided by pretest performance) of subjects in the pilot study. In this way it was hypothesized that goal difficulty would be held constant between the participative and assigned goal setting conditions in the present study while taking into account each individual's ability, and allowing for random assignment to conditions.

The experimenter told each subject that he felt the goal was a reasonable one for him/her to work toward. The subject was then asked to verbalize his or her goal to the experimenter who then printed it on a 3 x 5 card and placed it on the workbench.

Subjects in the do best condition were simply instructed to do their best to assemble as many toys as possible in the twenty minute work period.

It should be noted that a deliberate strategy of general supportiveness was followed by the experimenter with all subjects in all experimental conditions. This was done to control for possible differential effects on performance due to supportiveness (Latham & Saari, 1979b). The strategy was characterized by: (a) shaking hands and giving the subject a friendly welcome, (b) asking rather than telling the subject to do things, (c) encouraging the subject to ask questions, and (d) acting pleasant and cheerful (e.g., smiling).

Measures

Data were collected on three major classes of variables: (a) manipulation checks, (b) goal acceptance, and (c) task performance. The manipulation

checks consisted of questionnaire items administered at the end of the work session. To assess the effectiveness of the goal difficulty equating procedure on subjects' perceptions of goal difficulty, each subject was asked to respond to the following question on a 5-point Likert type scale: "How difficult was it for you to attain the goal?"

Participation (perceived influence) in setting the goal was measured by the following three questions also rated on a 5-point scale: "Regardless of other interactions with your supervisor, how much influence did you have over the goal that was set?"; "Compared to the supervisor, how much influence did you have over the goal that was set?"; and "Regardless of other interactions with your supervisor, how much say did you have in determining the goal?" Similarly, using a 5-point scale, participation in decisions concerning task strategy was assessed by the following three questions: "Forgetting the goal setting process, how much input do you feel you had with regard to making decisions about the task?"; "Compared to your supervisor, how much influence did you have with regard to making decisions about the task?"; and "Regardless of other interactions with your supervisor, how much say did you have in decisions about your job?"

Efforts at controlling job understanding and cognitive elements of PDM were assessed by the following six questions: "To what degree do you feel that you understood the instructions for the task you worked on?"; "How well did you understand your particular role in this exercise?"; "To what extent did you grasp or comprehend how to go about doing the task?"; "How clear were the performance expectations to you on this task?"; "To what degree did you know what you were accountable for on this task?"; and "To what extent were your responsibilities on this task clear to you?" All questions employed a 5-point scale.

The assessment of supervisory supportiveness required each subject to rate the experimenter on the following 12 bipolar adjectives, each with a 7-point scale: pleasant/unpleasant, cold/warm, supportive/nonsupportive, considerate/inconsiderate, accepting/rejecting, nasty/nice, friendly/unfriendly, gloomy/cheerful, quarrelsome/harmonious, kind/unkind, not understanding/understanding, and helpful/unhelpful.

Goal acceptance was measured by four questions, each responded to on a 5-point scale: "Commitment to a goal means acceptance of it as your own personal goal and your determination to attain it. How committed were you to attaining the goal that was set?"; "How important was it to you to at least attain the goal that was set?"; "To what extent did you internally agree to strive to attain the goal that was set?"; and "How reasonable was the goal that was set to you?"

Performance was operationalized by measuring the number of staples subjects used during the 20 minute work period. Although the goal for each subject was in terms of the number of toys assembled, the number of staples used was a more precise measure of work accomplished for statistical analysis. For example, an individual could join two parts of a toy with two staples and the toy would appear half assembled. However, since only two staples were used out of a total of eight required for a completed toy, the person was in actuality only one quarter of the way done with the assembly. Thus the number of staples used provided a measure of both quality and quantity of performance.

ResultsGoal Difficulty

A 2 x 2 analysis of variance revealed no significant main or interaction effects with regard to subjects' perceptions of goal difficulty. A comparison of objective goal levels using a 2 x 2 analysis of variance also revealed no significant main or interaction effects ($M = 312.5$, $SD = 47.9$). Thus, the manipulation designed to equate goal levels between the participative and assigned goal setting groups was effective.

Participation

The goal influence index was the mean of the three questionnaire items on perceived goal influence (Cronbach's alpha = .96). A 2 x 2 analysis of variance revealed that individuals in the participative goal setting condition perceived more influence in setting their goals than did individuals in the assigned goal condition ($M = 4.15$, $SD = .82$, and $M = 1.35$, $SD = .73$, respectively); $F(1.44) = 149.3$, $p < .01$. There were no other significant main or interaction effects.

The index measuring perceived influence on task strategy decisions was the mean of the three questionnaire items on this topic (Cronbach's alpha = .96). The mean influence level of those individuals who participated in decisions on task strategy was 4.45 ($SD = .52$) compared to 1.39 ($SD = .62$) for those individuals who were simply assigned task alternatives. This difference was significant, $F(1.66) = 509.16$, $p < .01$. No other main or interaction effects were obtained.

Job Understanding

The mean of the six questions assessing job understanding (Cronbach's alpha = .75) was 4.01 (SD = .63). There were no main or interaction effects between conditions. Thus, the efforts to control the amount of information provided in each experimental condition were successful, and all subjects understood to a high degree the task and their responsibilities.

Supervisory Support

There were no significant differences between conditions on the 12 item measure of perceived supervisory support (Cronbach's alpha = .92). All of the subjects indicated a relatively high level of supportiveness was present on the part of the experimenter ($M = 5.93$, $SD = .76$).

Goal Acceptance

The measure of goal acceptance was the mean of the four questionnaire items assessing this variable (Cronbach's alpha = .81). A 2×2 analysis of variance revealed no significant main or interaction effects among the conditions. The overall mean was 3.89 (SD = .69), indicating that goal acceptance was relatively high in all conditions.

Performance

A test for homogeneity of regression coefficients revealed no significant difference among the experimental conditions. Thus, a 3×2 analysis of covariance was conducted using the performance premeasure (ability) as the covariate. The analysis revealed a significant main effect for goal setting, $F(2.65) = 5.04$, $p < .01$, but no effects for participative decision-making or for the interaction of participative decision-making and goal setting. The adjusted mean performance levels for the experimental conditions are presented in Table 1.

Insert Table 1 about here

Since certain a priori comparisons were of particular interest in the design of this experiment, four planned F-tests were conducted (Winer, 1971, pp. 785-786). No significant difference was found between participative goal setting and assigned goal setting. Nor was there a significant difference between the participative decision-making group and the assigned decision group in the do best control condition. There was, however, a significant difference between the assigned goal condition and the do best control condition, $F(1, 65) = 4.95$, $p < .05$; and between the combination of the participative and assigned goal setting conditions and the do best control condition, $F(1, 65) = 6.03$, $p < .05$.

There was a significant linear relationship overall between the actual difficulty level of the goals that were set and the number of toys assembled during the task, $r(46) = .70$, $p < .01$. With ability partialled out, $r = .31$, $p < .02$.

Discussion

This study was the eleventh in a series of investigations that have examined the effects of participation in goal setting on performance. Five studies, including the present one, were conducted in the laboratory; six studies were conducted in the field. As noted in the introduction to this paper, the samples have included loggers, typists, engineers/scientists, government workers, and college students. The tasks have included felling trees, typing, test-scores in a selection battery, performance appraisals, brainstorming, basic arithmetic, and performing in a business game.

The experimental design used in the present study was an improvement over previous investigations in that both participation in decision making as well as goal setting were independently manipulated. And yet, the conclusions are the same. The motivational effect of participation in itself does not affect performance. Participation only affects performance to the extent that it affects goal difficulty (Latham, Mitchell & Dossett, 1978). If assigned goals lead to higher goals than those which are set participatively, performance is also higher with assigned goals (Latham, Steele & Saari, 1981). In the present study there was a positive linear relationship between an objective measure of goal difficulty and performance.

The results of these studies may run counter to the prevailing ideology of many behavioral scientists, but they do not run counter to the empirical evidence. As Locke and Schweiger (1979) pointed out, the issue of participative decision-making should be regarded as a pragmatic rather than a moral one. Too frequently a false dichotomy is presented to management: an authoritarian approach or a participative one. As implied in this and the previous series of studies, goal setting, supportiveness, or job understanding are not precluded by a style of leadership that does not emphasize participative decision making.

Nevertheless, the present study only examined the motivational mechanism by which PDM has been hypothesized to affect performance. The second major mechanism by which PDM, according to the literature (see Bartlem & Locke, 1981), affects performance is cognitive in nature. The cognitive effects of PDM, as Bartlem and Locke have pointed out, can be determined by comparing decision quality with and without PDM under varying conditions of subordinate knowledge. This was not done in the present study. In one previous study

when subordinate knowledge was held constant, participation in goal setting had no effect on decision quality (Latham & Saari, 1979a). This is understandable in that the participation was restricted to a decision on a specific quantity rather than quality of ideas to be produced. In another previous study (Latham & Saari, 1979b), a post hoc interview with the experimenter who was blind to the hypotheses of the study revealed that participation in goal setting resulted in greater understanding of task requirements than that which occurred when goals were assigned to subjects. Clearly studies are needed which examine the cognitive effects of participation on performance independently of the goals that are set. The motivational effects of participation on performance appear to be minimal.

With regard to external validity, the results of this one study must be viewed in conjunction with those studies that have immediately preceded it. Further, Dipboye and Flanagan (1979) have noted that: "There are differences among organizational settings that are as large as the differences that exist between an organizational setting and a laboratory." Because of this, the coordinated use of both the laboratory and the field provide a more powerful research vehicle for testing hypotheses than the use of either in isolation (Runkel & McGrath, 1972). The variety of actors, settings, and tasks described previously in this paper provide strong support for the conclusions drawn here. When viewed as a whole, this series of studies provides strong support for Locke's (1968) theory of goal setting. Namely, specific goals lead to higher performance than do generalized "do best" goals; there

is a linear relationship between goal difficulty and performance; and participation, from a motivational standpoint, affects performance only to the extent that it includes the setting of a specific goal and/or a specific goal that is more difficult than one that is assigned unilaterally by a supervisor.

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TABLE 1

Adjusted Performance Means for Experimental Conditions

	Partici- pative Goal Setting	Assigned Goal Setting	Do Best	
Participative Decision-Making	325.6	318.5	283.1	309.0
Assigned Decision	324.4	318.0	300.0	314.1
	325.0	318.3	291.5	